

minor change. This amendment was not made for reasons of patentability. No new matter has been added by way of these amendments.

The Examiner noted that the title on page 1 of the specification is different than the title declared on the oath/declaration. In addition, the Examiner objected to the declaration for failing to set forth the citizenship of the inventor. A newly executed declaration is enclosed. Further, the title in the specification has been amended to "Instream Loader" as recited in the newly filed oath/declaration.

Per claims 44 and 45, and claims depending therefrom, the specification was objected to under 37 CFR §1.75 (d) (1), because the specification fails to provide proper antecedent basis for the claimed subject matter. In particular, the limitations in the claims, which are related to the receiver/decoder were considered only to be shown for a transmission system. In other words, the table, table identification, and table identification-extension were considered only to relate to a transmission system.

However, the Applicant notes that the specification, as originally filed, provides that:

The receiver/decoder may be arranged to download tables. If so, the downloading means may be arranged to download a table having a table identification ("TID") and a predetermined table identification extension ("TID-extension") so as to download a directory table, to determine from the content of the directory table the TID-extensions of module tables having the same TID as that of the downloaded directory table and TID-extensions determined from the downloaded directory table so as to download said loader (See page 10, lines 3-10).

Therefore, the specification, at least at referenced portions, provides proper antecedent basis for claims 44 and 45. Accordingly, withdrawal of the objection is respectfully requested.

III. Claim Objections

Claims 5 and 24 were objected to under 37 CFR §1.75 (c) as being improper dependent form for failing to further limit the subject matter of a previous claim. Claims 5 and 24 have been cancelled rendering the Examiner's rejection of these claims moot. Additionally, claims 2-6, 9, 13, 17, 19, 21-31, 34-37, 43-51, and 53 were objected because of informalities. As previously mentioned, these claims have been amended to correct these minor informalities. Accordingly, withdrawal of the objections are respectfully requested.

IV. Claim Rejections under 35 U.S.C. §112

Claim 51 was rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way to enable one skilled in the art to make and/or use the invention. The feature of "transmitting a second data loader included in said bitstream at the receiver/decoder," was asserted to relate to a transmitting system. However, the Applicant notes that the limitation in claim 51 recites, "transmitting a second loader included in said bitstream; downloading the second loader, at the receiver/decoder; and downloading the loader and the application using the second loader." Consequently, the limitation, "at the receiver/decoder," is not a limitation of transmitting; rather, this is a limitation of downloading. Therefore, claim 51 appropriately identifies the location of the downloading. Accordingly, withdrawal of this rejection is respectfully requested. The Applicant respectfully asserts that one of ordinary skill in the art having reference to the Applicant's disclosure would be able to make and/or use the invention, and further, would understand both the nature and scope of the above limitations. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 28 and 48 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. With respect to claim 28, the limitation, "the version number of the receiver/decoder," was asserted as lacking sufficient antecedent basis. Claims 28 and 48 also were asserted as lacking sufficient antecedent basis regarding the limitation, "the predetermined TID-extension." The Applicant again thanks the Examiner for carefully reviewing the present application, and has amended the claims to correct the errors. Accordingly, withdrawal of this rejection is respectfully requested.

V. Claim Rejections under 35 U.S.C. §102

Claims 1, 2, 5, 9, 20, 21, 24, 26, 27, 31, 39, 43, 46, and 51 were rejected under 35 U.S.C. §102 (b) as being anticipated by European Patent No. 0 608 213 A2 ("Menand '213"). Claims 1, 20, and 39 are independent claims. Claims 2, 5, 9, 21, 26, 27, 31, 43, 46, and 51 depend, directly or indirectly, from one of the independent claims. To the extent that the rejection still applies to the amended claims, the rejection is respectfully traversed.

The present invention relates to downloading a loader in native code which in turn downloads an application in interpretative code. In one embodiment, the application states that:

The downloaded data loader comprises a data loading program. At least part of the data loader, preferably most of, or even all of the data loader, may be in the form of native code. As used herein, the term 'native code' includes hardware specific code, code which is specific to a particular hardware platform of the receiver/decoder, code which is non-interpretative, and/or code which is directly executable by a microprocessor of the receiver/decoder (Page 3 of the specification).

Advantageously, downloading a loader in native code does not require interpretation by software to be executed by the microprocessor. With regard to performance, the claimed

invention is not inhibited by the associated costs of using interpretation software (or an interpreter), *e.g.*, slow compile times. In one embodiment, shown in Figure 9, a “bootstrap” loader (100) is used to download a loader in native code, *i.e.*, “instream” loader. The instream loader downloads data from the bitstream, *e.g.*, to update the resident software.

With respect to claim 1, Menand ‘213 does not disclose or suggest, “receiving a bitstream including the application in interpretative code; downloading into the receiver/decoder a loader in native code for loading the application in interpretative code from the bitstream; and downloading the application in interpretative code in the receiver/decoder from the bitstream using said downloaded data loader in native code,” as required by amended claim 1.

In contrast to the present invention, Menand ‘213 discloses “[t]hat [the] interpreter will read AVI data component instructions in intermediate code from RAM 412, manipulate memory, and interact with the hardware through other software components via application programming interface (API),” (col. 6, ll. 32-41). Furthermore, “[t]his autostart module is in the form of intermediate code, and is executed by being interpreted by the interpreter. The autostart module performs the remainder of the initialization and begins execution of the AVI program,” (col. 7, ll. 44-48).

Consequently, Menand ‘213 does not disclose or teach the limitation of downloading the loader in native code for loading an application in interpretative code from the bitstream into the receiver/decoder. In particular, the use of “intermediate code” as described by Menand ‘213 requires interpretation, where native code, as required by claims 1, 20, 39, and 52, inherently do not require interpretation.

Because Menand ‘213 fails to disclose or suggest all of the limitations of claims 1, 20, 39, and 52, Menand ‘213 cannot anticipate the invention recited in claims 1, 20, 39, and 52.

Claims 2, 5, 9, 21, 24, 26, 27, 31, 43, 46, and 51 depend, directly or indirectly, from claims 1, 20, 39, or 52, and thus, are likewise patentable for at least the same reasons as presented above. Accordingly, withdrawal of the rejection is respectfully requested.

VI. Claim Rejections under 35 U.S.C. §103

Claims 3, 4, 6, 13, 17, 19, 22, 23, 25, 28-30, 47, 48, and 50 were rejected under 35 U.S.C. §103 (a) as being unpatentable over European Patent No. 0 680 213 A2 (“Menand ‘213”) in view of U.S. Patent No. 5,367,571 (“Bowen”), U.S. Patent No. 5,608,732 (“Bestler”), International Application No. 97/20432 (“Lett”), U.S. Patent No. 5,666,293 (“Metz”), European Patent No. 0 680 216 A2 (“Menand ‘216”), or U.S. Patent No. 5,787,017 (“Hearing”).

As discussed above, Menand ‘213 does not anticipate the claimed invention. In particular, Menand ‘213 does not disclose or suggest downloading a loader in native code as required by independent claims 1, 20, 39, and 52. Furthermore, Menand ‘213 explicitly teaches away from downloading a loader in native code. In other words, Menand discloses an autostart module that processes the bit stream as an external resource to access data or code. Consequently, this requires the autostart module and an application to be written in the same language, namely interpretative code, (See Figure 2).

Therefore, Menand ‘213 teaches away from any combination that would allow a loader to be downloaded in native code as in the claimed invention, because the autostart module disclosed by Menand ‘213 must be written in interpretative code to communicate with the application. Moreover, none of the other cited references show or suggest downloading a loader in native code. Thus, even assuming *arguendo* that it would be proper to combine the references

(which, as discussed above, the Applicant does not believe) as suggested by the Examiner, all of the limitations are not shown or suggested by the references.

First, Bowen fails to disclose or suggest downloading a loader in native code, with respect to claims 1, 20, 39, and 52. Bowen provides a subscriber terminal with a plug-in expansion card and is completely silent to the features of the claimed invention. The expansion card is used to provide additional memory space, and renewed or additional security, (col. 2, ll. 41-44). Thus, claims 1, 20, 39, and 52 are patentable over Menand '213 and Bowen, whether considered separately or in combination. Claims 3, 4, 22, and 23 depend, either directly or indirectly, from claims 1, 20, 39, and 52. Therefore, these claims are likewise patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Bestler is completely silent to downloading a loader in native code as recited in claims 1, 20, 39, and 52. In particular, Bestler relates to assembling and formatting a group of records for downloading (col. 3, ll. 66-67 and col. 4, ll. 1-63). There is no suggestion of downloading a loader in native code. Therefore, claims 1, 20, 39, and 52 are patentable over Menand '213 and Bester, whether considered separately or in combination. Claims 6 and 25 depend from claims 1, 20, 39, or 52, directly or indirectly, and are patentable for at least the same reasons as presented above. Accordingly, withdrawal of this rejection is respectfully requested. Accordingly, withdrawal of this rejection is respectfully requested.

As for claims 17, 19, and 30, these claims have been cancelled, therefore the rejection of these claims over Menand '213 in view of Lett is rendered moot. However, to the extent this reference still applies to the amended claims, the rejection is respectfully traversed. Lett discloses downloading "a routine which is appropriate for interfacing with the particular processor and memory types," (page 19, ll. 1-5). However, as previously mentioned, Menand

'213 explicitly teaches away from downloading a loader in native code as such a combination does not allow the autostart module as disclosed by Menand '213 to communicate with the application. Nonetheless, Lett does not disclose or suggest the claimed invention as recited in claims 1, 20, 39, and 52.

In particular, Lett teaches a second-boot loader routine, which is software stored in the receiver/decoder, (page 18, l. 16 through page 19, l. 5). Boot (or "bootstrap") loaders tend to have "basic" structure and minimal functionality, additionally, boot loaders cannot be modified once written to read-only memory (ROM). Advantageously, the instream loader as in the claimed invention is a loader downloaded from the bitstream, not resident software as disclosed by Lett. Therefore, the instream loader can be modified and/or downloaded appropriately. Claims 1, 20, 39, and 52 are patentable over Menand '213 and Lett, whether considered separately or in combination. Accordingly, withdrawal of this rejection is respectfully requested.

Regarding Metz, Metz is also completely silent to downloading a loader in native code as recited in claims 1, 20, 39, and 52. Particularly, Metz relates to downloading packets in standardized format, (col. 4, ll. 44-56). Because Metz fails to disclose downloading a loader in native, Metz does not render the claimed invention obvious. Thus, claims 1, 20, 39, and 52 are patentable over Menand '213 and Metz, whether considered separately or in combination. Additionally, claims 29 and 49, being dependent claims, are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

With respect to Menand '216, Menand '216 does not disclose or suggest downloading a loader in native code as required by claims 1, 20, 39, and 52. Menand '216 involves formulating signal modules to generate an interactive signal. There is no suggestion of the loader in native code by Menand '216. Therefore, Menand '216 also fails provide that which

Menand '213 lacks. Consequently, claims 1, 20, 39, and 52 are patentable over Menand '213 and Menand '216, whether considered separately or in combination. Claims 28, 34-36, 44, 45, 47, 48, 50, 52, and 53 depend, directly or indirectly, from claims 1, 20, 39, and 52, and thus, are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

On the same note, Hearing also fails to provide that which both Menand '213 and Menand '216 lack. Hearing specifically relates to acquiring measurement data from a measurement signal. Hearing in no way discloses or suggest a loader for downloading native code as required by claims 1, 20, 39, and 52. Therefore, claims 1, 20, 39, and 52 are patentable over Menand '213, Menand '216, and Hearing, whether considered separately or in combination. As such, claim 13 which indirectly depends from claim 1 is also patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

Lastly, and as previously mentioned, Lett also fails to provide that which both Menand '213 and Menand '216 lack. Therefore, claims 1, 20, 39, and 52 are patentable over Menand '213, Menand '216 and Lett, whether considered separately or in combination. Accordingly, claims 35 and 36 are patentable for at least the same reasons. Accordingly, withdrawal of this rejection is respectfully requested.

VII. Concluding Remarks

Applicant believes this reply to be fully responsive to all points raised in the Office Action dated September 12, 2002. If this belief is incorrect, or other issues arise, please do not hesitate to contact the undersigned or his associates at the telephone number listed below. Please

apply any charges not covered, or any credits, to Deposit Account 50-0591 (Reference Number 11345.011001).

Respectfully submitted,

Date: 11/21/02

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Marked-Up Version of Specification

IN THE SPECIFICATION:

In the paragraph on page 13, line 7:

Figures 13 A-D illustrate[s] the procedure for downloading data.

In the paragraph on page 27, lines 21-22:

The steps in, for example, the updating of the resident software will now be described with reference to Figures 13 A-D.

In the paragraph on page 27, lines 24-28:

In step S101 of Figure 13 A, software stored in the receiver/decoder checks the integrity of any resident software by performing the checksum calculation and comparing the result of that calculation with the value of the checksum stored in the resident software. If the two values are different, then updating continues in the native state; if the two values are the same, or if no resident software is located, then updating continues in the normal state.

In the paragraph on page 28, lines 29-32 and page 29, lines 1-3:

Referring to Figure 13 B, [If] if such an entry is located, the Bootstrap loader 100 reads the TID 212 of the MPEG tables used for the loader directory 300 associated with that HVN 210, the Instream loader and the software to be downloaded and, in step S109, downloads and authenticates the correct loader directory 300. If the loader directory 300 is not downloaded before the time-out is reached, or if the loader directory is not authenticated (as an error has occurred during the downloading), the updating is aborted and the ERRL message displayed.

In the paragraph on page 29, lines 28-31:

Referring to Figure 13 C, [If] if updating is to proceed in the normal state, the Bootstrap loader 100 determines in step S201 whether an update request from an application is

already pending. If not, the updating continues as normal. If there is already a pending update request then the pending request is processed first.

In the paragraph on page 30, lines 26-30:

Referring to Figure 13 D, [If] if these parameters are defined in the parameter field, the updating proceeds to step S207, in which the Bootstrap or Resident loader tunes the tuner 4028 to the transponder 2014 in accordance with the parameters stored in the parameter fields. If the tuning fails, the updating is aborted and the ERRL message is displayed.

Marked-Up Version of Claims

IN THE CLAIMS:

1. (Twice Amended) A method of downloading [data] an application to a receiver/decoder, comprising:
receiving a bitstream including the [data] application in interpretative code;
downloading into the receiver/decoder a loader in native code for loading the [data] application in interpretative code from the bitstream [into the receiver/decoder]; and
downloading [said data] the application in interpretative code in the receiver/decoder from the bitstream using said downloaded data loader in native code.
2. (Amended) [A] The method according to Claim 1, wherein the downloaded data loader is deleted from the receiver/decoder after the [data] application has been downloaded from the bitstream.
3. (Amended) [A] The method according to Claim 1, wherein the downloaded data loader is subsequently stored in non-volatile memory of the receiver/decoder.
4. (Amended) [A] The method according to Claim 3, wherein the non-volatile memory is a Flash memory volume of the receiver/decoder.
6. (Twice Amended) [A] The method according to claim 1, wherein a portion only of [data] the application stored in the receiver/decoder is replaced by a corresponding portion of [data] the application downloaded by the downloaded data loader.
9. (Twice Amended) [A] The method according to Claim 44, further comprising[,]
downloading module tables having the same TID.

13. (Twice Amended) [A] The method according to Claim 47, wherein the version identification comprises a code for the version of the receiver/decoder and a code for the manufacturer of the receiver/decoder.

19. (Twice Amended) [A] The method according to Claim 51, wherein at least part of the second data loader is in the form of native code [which is specific to the hardware of the receiver/decoder].

20. (Amended) A receiver/decoder comprising:
a receiver for receiving a bitstream including [data] an application in interpretative code;
storage means; and
downloading means for downloading from the bitstream into the storage means a loader in native code for loading the [data] application in interpretative code from the bitstream into the receiver/decoder.

21. (Amended) [A] The receiver/decoder according to Claim 20, further comprising means for deleting the downloaded data loader from the storage means after the [data] application has been downloaded from the bitstream.

22. (Amended) [A] The receiver/decoder according to Claim 20, further comprising a non-volatile memory for storing the downloaded data loader after the [data] application has been downloaded from the bitstream.

23. (Amended) [A] The receiver/decoder according to Claim 22, wherein the non-volatile memory is a Flash memory volume of the receiver/decoder.

25. (TwiceAmended) [A] The receiver/decoder according to [any of] claim 20, wherein the downloaded data loader is adapted to replace a portion only of [data] the application stored in the receiver/decoder by a corresponding portion of [data] the application downloaded thereby.

26. (Twice Amended) [A] The receiver/decoder according to claim 20, arranged to download tables.

27. (Amended) [A] The receiver/decoder according to Claim 26, wherein said downloading means is arranged to download a table having a table identification ("TID") and a predetermined table identification extension ("TID-extension") so as to download a directory table, to determine from the content of the directory table the TID-extensions of module tables having the same TID as the directory table, and to download the module tables having the same TID as that of the downloaded directory table and TID-extensions determined from the downloaded directory table so as to download said loader.

28. (Twice Amended) [A] The receiver/decoder according to Claim 26, wherein said downloading means is arranged to download a directory table having a predetermined TID and containing, for each of a plurality of version identifications of a receiver/decoder, a respective TID associated with that version identification, to determine the version identification of the receiver/decoder, and to download a directory table having a TID associated with [the] a version number of the receiver/decoder and [the] a predetermined TID-extension.

29. (Twice Amended) [A] The receiver/decoder according to Claim 27, wherein said downloading means is arranged to determine whether a directory version identification of a currently transmitted directory table is more recent than the directory version identification of a previously downloaded directory table having the same TID as the currently transmitted directory table, and if not, to abort the downloading of said loader.

31. (Twice Amended) [A] The receiver/decoder according to claim 20, wherein said downloading means is arranged to download a second loader included in [data] the application

included in said bitstream for downloading one of the first-mentioned loader and the [data] application.

34. (Twice Amended) [A] The transmission system according to claim 53, wherein said tables have respective different TID-extensions other than a predetermined TID-extension; said system further comprising means for generating a respective directory tables for the plurality of modules having the same TID, each directory table having that TID and said predetermined TID-extension, the directory table containing for each of the modules a name of that module and the respective TID-extension.

35. (Twice Amended) [A] The transmission system according to claim 52, further comprising:

means for generating a directory table having a predetermined table identification ("TID") and containing, for each of a plurality of version identifications of a receiver/decoder, a respective TID associated with that version identification.

36. (Twice Amended) [A] The transmission system according to claim 52, further comprising means for including in each transmitted table a version identification therefor.

39. (Amended) A signal including at least one loader for loading [data] the application into a receiver/decoder, and [data] the application associated with the [or each] at least one loader, the [or each] at least one loader being divided into a plurality of modules and the [data] application associated with the [or each] at least one loader being divided into a respective plurality of modules.

43. (Amended) [A] The method according to claim 1, wherein the bitstream includes at least one data loader, said method further comprising:

dividing the at least one data loader into a plurality of modules; and

dividing the [data] application into a respective plurality of modules, each plurality of [data] the application modules being associated with a respective plurality of data loader modules.

44. (Amended) [A] The method according to claim 43, further comprising:

formatting the plurality of data loader modules as respective tables, the tables having the same respective table identification ("TID") and respective different table identification extensions ("TID-extensions"); and

formatting the plurality of [data] the application modules as a respective table, the tables having the same respective TID as the tables of the data loader modules associated therewith and respective different TID-extensions.

45. (Amended) [A] The method according to claim 9, wherein said tables have respective different TID-extensions other than a predetermined TID-extension, and further comprising:

generating a respective directory table for the plurality of modules having the same TID, the directory table having said predetermined TID-extension and the same TID, the directory table containing for the plurality of modules a name of a module and a respective TID-extension.

46. (Amended) [A] The method according to claim 45, further comprising:

downloading one of the tables having the predetermined TID-extension so as to download a directory table;

determining from the content of the directory table the TID-extensions of the module tables having the same TID as the directory table; and

downloading the module tables having the same TID as that of the downloaded directory table and TID-extensions determined from the downloaded directory table.

47. (Amended) [A] The method according to claim 1, further comprising:

generating a directory table having a predetermined table identification ("TID") and containing, for a plurality of version identifications of a receiver/decoder, a respective TID associated with that version identification.

48. (Amended) [A] The method according to claim 13, further comprising:

downloading said directory table having the predetermined TID; and determining the version identification of the receiver/decoder, wherein downloading a directory table comprises downloading that one of the tables having a TID associated with [the] a version number of the receiver/decoder and [the] a predetermined TID-extension.

49. (Amended) [A] The method according to claim 45, further comprising:

including in a transmitted directory table a directory version identification therefor;
determining at the receiver/decoder whether the directory version identification of a currently transmitted directory table is more recent than the directory version identification of a previously downloaded directory table having the same TID as said currently transmitted table;
and

aborting downloading the data if the currently transmitted directory table is not more recent.

50. (Amended) [A] The method according to claim 1, further comprising:

including in the bitstream a data version identification of the data;
determining, at the receiver/decoder, whether the data version identification of received data is more recent than the data version identification of currently stored data; and
downloading the received data from the bitstream if the received data is more recent.

51. (Amended) [A] The method according to claim 1, further comprising:

transmitting a second data loader included in said bitstream;
downloading the second data loader, at the receiver decoder; and
downloading the data loader and the data using the second data loader.

52. (Amended) A transmission system comprising:

means for transmitting a bitstream including at least one loader for loading [data] an application in interpretative code into a receiver/decoder, and [data] an application in native code associated with the at least one loader; and

means for dividing the at least one loader into a plurality of modules and dividing the [data] the application associated with the at least one loader into a respective plurality of modules for transmittal by said transmitting means.

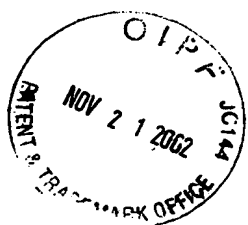
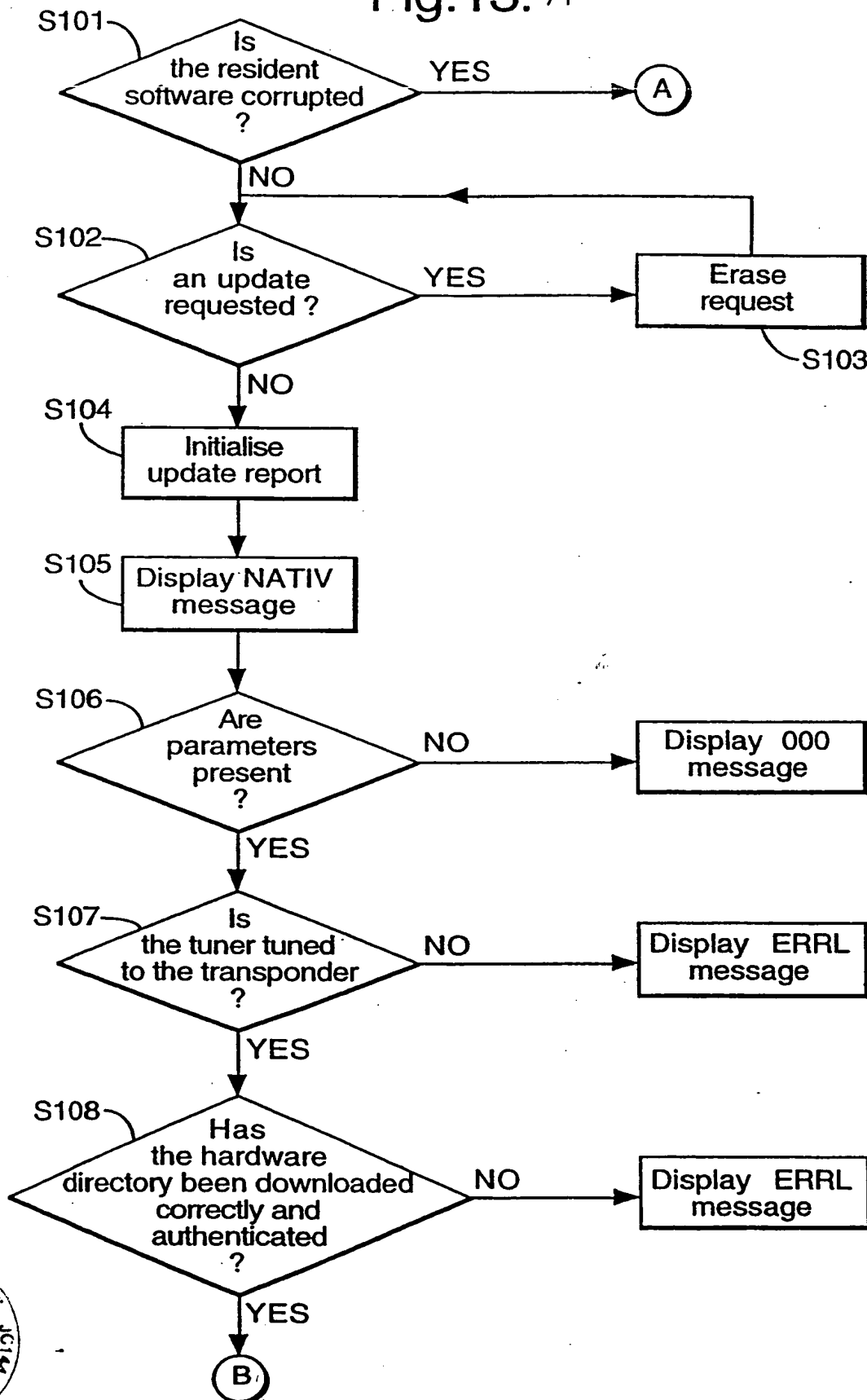
53. (Amended) [A] The transmission system according to claim 52, further comprising:

means for formatting each of the modules of the at least one loader as a respective table, the table of the at least one loader having the same respective table identification ("TID") and respective different table identification extensions ("TID-extensions"); and

means for formatting each of the modules of the data associated with the at least one loader as a respective table, the table of the modules of data having the same respective TID as the tables of the loader modules associated therewith and respective different TID-extensions.

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Fig.13. A



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Fig.13 (Conti). B

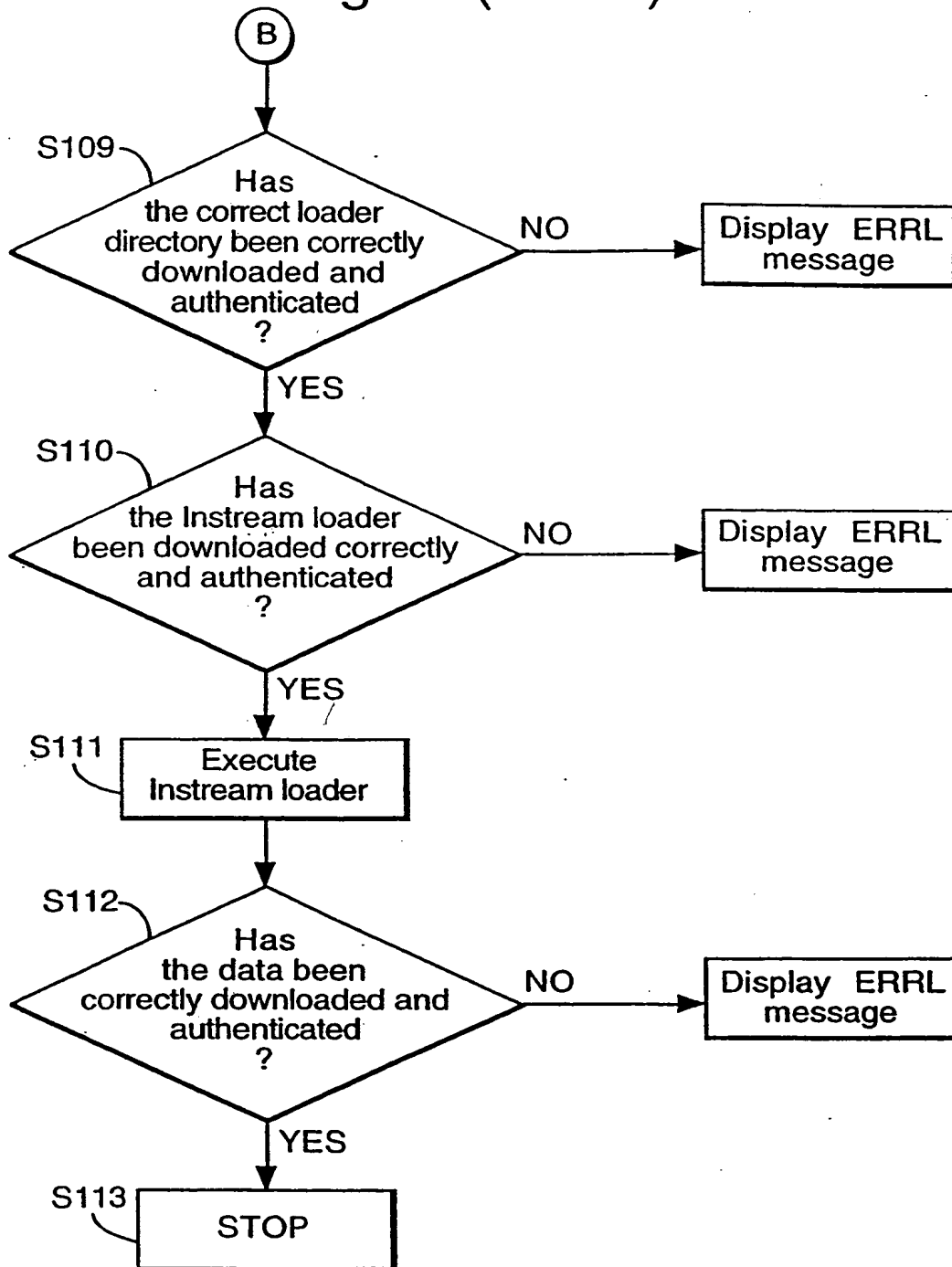
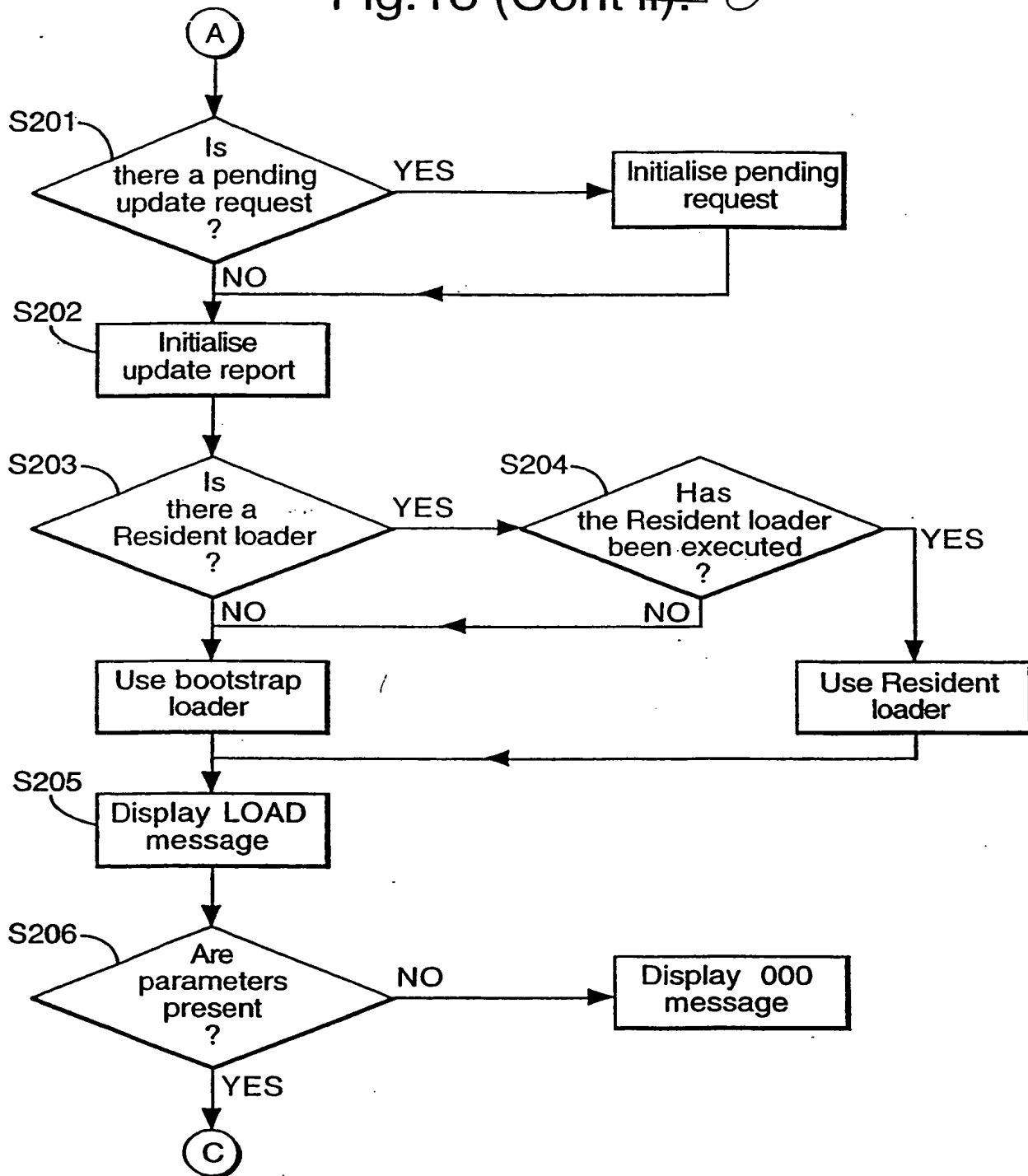


Fig.13 (Cont ii). C





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Fig.13 (Cont iii). D

